UCLouvain

lbarc1360

2017

Building mechanical systems and comfort

4 credits	40.0 h	Q1

Teacher(s)	Bodart Magali ;Dartevelle Olivier (compensates Van Moeseke Geoffrey) ;Van Moeseke Geoffrey ;
Language :	French
Place of the course	Bruxelles
Prerequisites	*The prerequisite(s) for this Teaching Unit (Unité d'enseignement – UE) for the programmes/courses that offer this Teaching Unit are specified at the end of this sheet.*
Main themes	This teaching unit covers all the aspects linked to architectural and technological measures designed to ensure quality of atmosphere. In particular, it covers: • visual comfort and techniques for natural and artificial lighting • acoustic comfort and techniques for acoustic correction and insulation • thermal comfort, bioclimatic architecture and techniques for heating and cooling • air quality and ventilation techniques. This teaching unit develops the link between the perception of comfort, the relevant regulatory and technological aspects and their architectural consequences in terms of space. In this way, it provides students with the necessary foundations to eventually bring these topics into their practice as designers, in the context of European regulation imposing on buildings the requirement to be 'nearly zero-energy' by 2020.
Aims	This teaching unit focuses particularly on two dimensions of the profile of a Bachelor level graduate in Architecture: developing a technical dimension and making use of other disciplines. **Specific learning outcomes:** In particular, by the end of this course, students will be able to 1 • present a well-argued energy design plan for architectural projects in the current climatic, regulatory and environmental context. • describe the role and the working of the main equipment in ventilation, heating, cooling, artificial lighting and production of renewable energy in terms of a building. • use the normal sizing rules to pre-size ventilation, heating, cooling and artificial lighting installations to ensure air quality and thermal comfort. • clarify the basic concepts linked to the perception and the propagation of sound and the principles of acoustic correction. • apply these concepts to simple problems of assessing the level of acoustic insulation against the airborne noises of walls, propagation of impact noise and acoustic correction (room acoustics). **Contribution to the learning outcome reference framework:** **Make use of other subjects** • Seek out other approaches, exchanges of views and ways of enhancing thinking about architecture • Interpret the knowledge of other subjects • Make use of other subjects to ask questions about the design and implementation of an architectural project **Use the technical dimension** • Be familiar with and describe the main technical principles of building • Observe and assess the main construction principles of a building • Be able to apply the various basic technical principles in a producing a work of architecture - - - - *The contribution of this Teaching Unit to the development and command of the skills and learning outcomes of the programme(s) can be accessed at the end of this sheet, in the section entitled "Programmes/courses offering this Teaching Unit".*
Bibliography	Les étudiants disposent d'un syllabus pour chaque enseignant. Les présentations PowerPoint sont mises à leur disposition après chaque séance de cours.
Faculty or entity in charge	LOCI

Programmes containing this learning unit (UE)

Program title	Acronym	Credits	Prerequisite	Aims
Bachelor in architecture (Bruxelles)	ARCB1BA	4	LBARC1260	